

**U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION REPORT**

I. HEADING

DATE: August 10, 2000

SUBJECT: University Psychiatric Center (UPC) Mercury Spill, Emergency Response, Warren, Macomb County, Michigan

FROM: Michelle Jaster, OSC, U.S. EPA, ERB, RS1, Grosse Ile, MI

TO: C. Beasley, USEPA, OSWER, Washington, DC (VIA LAN)
 R. Karl, Chief, ERB, U.S. EPA, Chicago, IL..... (VIA LAN)
 J. El-Zein, Chief RS1, U.S. EPA, Grosse Ile, MI (VIA LAN)
 W. Messenger, Chief, U.S. EPA, ERB/ESS, Chicago, IL..... (VIA LAN)
 V. Narsete, Public Affairs ERB, U.S. EPA, Chicago, IL..... (VIA LAN)
 A. Marouf, U.S. EPA, H&S, Chicago, IL (VIA LAN)
 G. Carpenter, MDEQ, Lansing, MI (carpentg@state.mi.us)
 B. Boyle, Michigan Department of Community (E-mail)
 Duty Officer, NRC, Washington, DC (E-mail)
 P. Phelps, General Site Administrator, University Psychiatric Center (E-mail)
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 D. Luongo, Environmental Health Manager, Wayne State University (E-mail)
 G. Miles, Deputy Fire Marshall, Warren Fire Department (Fax)

POLREP 1 - Initial/Final with photos (see attachments; photo1, photo2, photo3, photo4)

II. BACKGROUND

Site No.: Pending
 Delivery Order Number: NA
 Response Authority: CERCLA
 CERCLIS ID Number: NA
 NPL Status: Not on NPL
 MDEQ Notification: Yes
 Latitude/Longitude: 42°30'19.3" N, 83°03'58.2" W
 Start Date: August 3, 2000
 Completion Date: August 4, 2000

III. SITE INFORMATION**A. Incident Category**

CERCLA-Emergency Response

B. Site Description**1. Site Location**

The University Psychiatric Center Mercury Spill site is located at 28800 Ryan Road, Suite 300, Warren, Macomb County, Michigan. The spill location is in an exam/conference room on the third floor of a three story building, the Hutzler Professional Center. Other medical offices share the building and the University Center

for Women's Medicine shares the third floor with the University Psychiatric Center. The site is surrounded on all sides by commercial property with the Hutzler Health Center connected to the same building. Wayne State, Department of Psychology, runs the clinic and several other research offices in the building. Wayne State is the leaseholder of the building.

2. Description of Threat

An adolescent patient had broken a manometer, which contained elemental mercury, around 1830 hours on August 2, 2000, in a group conference room at the UPC. Michigan Department of Community Health, and the Warren Fire Department were notified of the situation on August 3, 2000. Parents of the patient were notified and told to bag the clothes and shoes that were worn that day. The bagged clothing was to be returned to the clinic for disposal.

IV. RESPONSE INFORMATION

A. Current Situation:

The University Psychiatric Center (UPC) contracted Marine Pollution Control (MPC) to perform cleanup activities. Wayne State University, Office of Environmental Health and Safety, provided technical assistance. All contaminated material has been bagged and placed in a secured room until Wayne State arranges for disposal. Patricia Phelps, General Site Administrator for UPC, suspended all operations at the clinic until air sampling is completed and analytical results were obtained.

B. Actions Taken:

On Thursday, August 3, 2000, at approximately 1345 hours, U.S. EPA and START mobilized to the UPC Mercury Spill site. U.S. EPA met with UPC's General Site Administrator, UPC's Safety Officer, Warren Fire Department's Deputy Fire Marshall, and the building superintendent to gain information regarding the spill. The UPC representatives stated that the spill occurred on the evening of August 2 and that the clinic staff secured the room. Sometime on August 3, 2000, the building superintendent took steps to clean up the spill. The superintendent did not see any signs of elemental mercury on the floor and thought that all of it was contained in the manometer's cuff. He transferred the mercury into a plastic bag and placed it in a red bio-hazard sharps container. He swept the floor with a vacuum cleaner, and resealed the door until further information was obtained regarding additional action. The sharps container was placed in a limited access bio-hazard room in the adjoining Hutzler Health Center. After the Warren Fire Department and Michigan Department of Community Health were notified, assistance from the U.S. EPA was requested. The U.S. EPA advised UPC to bag the vacuum cleaner that was used in the spill room and place it outside. The building's superintendent stated that each suite in the building had a separate ventilation system and that the vacuum cleaner was not used after he swept the floor of the spill room..

At approximately 1435 hours, Wayne State and MPC arrived at the site. At approximately 1525 hours, U.S. EPA, START, and Wayne State investigated the spill room and the bio-hazard room. There were visible beads of mercury on the broken manometer in the spill room, on the floor and on the top of the sharps container in the bio-hazard room. Two Jerome mercury vapor analyzers (MVA) were used to screen the rooms for mercury vapor and the results were 0 to 3 µg/m³ in the breathing zone and along the floor, and as high as 30 µg/m³ near the visible beads of mercury in

both rooms. The vacuum was screened and a reading as high as 291 µg/m³ was obtained. U.S. EPA recommended that the vacuum be properly disposed of with the mercury debris.

At approximately 1615 hours, MPC vacuumed the carpet in the initial spill room with a mercury vacuum cleaner and bagged the broken manometer. At approximately 1745 hours, MPC bagged all mercury-contaminated material in the bio-hazard room and vacuumed the floor of the bio-hazard room. MPC sprayed a mercury cleaning solution, HgX, on the floor of the bio-hazard room and allowed it to dry overnight. All bagged material was placed in a secure room until Wayne State arranges for proper disposal.

On Friday, August 4, 2000, MPC removed a 3-by 10-foot section of carpet from inside the initial spill room and mopped the HgX solution from the floor of the bio-hazard room. Wayne State arranged for air sampling to be performed. A sample from in the spill room, hallway, and waiting room of the UPC, a background sample from the building, and a sample from the bio-hazard room were collected using SKC sampling tubes and pumps. Samples were delivered to AAC Trinity for analysis.

C. Next Steps

Wayne State needs to arrange for proper disposal of all mercury-contaminated material and will notify all agencies of ultimate disposal, as appropriate.

D. Key Issues

None.

V. COST INFORMATION

Estimated site costs as of August 10, 2000

START	\$ 1,000.00
U.S. EPA	\$ 1,000.00

20

30

10

0

mmHg

ADC

8000







**U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION REPORT**

I. HEADING

DATE: August 11, 2000

SUBJECT: University Psychiatric Center (UPC) Mercury Spill, Emergency Response, Warren, Macomb County, Michigan

FROM: Michelle Jaster, OSC, U.S. EPA, ERB, RS1, Grosse Ile, MI

TO: C. Beasley, U.S. EPA, OSWER, Washington, DC. (VIA LAN)
R. Karl, Chief, ERB, U.S. EPA, Chicago, IL..... (VIA LAN)
J. El-Zein, Chief, RS1, U.S. EPA, Grosse Ile, MI (VIA LAN)
W. Messenger, Chief, ESS, U.S. EPA, Chicago, IL (VIA LAN)
V. Narsete, Public Affairs ERB, U.S. EPA, Chicago, IL..... (VIA LAN)
A. Marouf, U.S. EPA, H&S, Chicago, IL (VIA LAN)
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D. Luongo, WSU, Environmental Health (d.luongo@wayne.edu)
G. Miles, Deputy Fire Marshall, Warren Fire Department (Fax)

POLREP 1 - Initial/Final with photos (see attachments; mercury beads in 4 locations)

II. BACKGROUND

Site No.:	Pending
Delivery Order Number:	NA
Response Authority:	CERCLA
CERCLIS ID Number:	NA
NPL Status:	Not on NPL
MDEQ Notification:	Yes
Latitude/Longitude:	42°30'19.3" N, 83°03'58.2" W
Start Date:	August 3, 2000
Completion Date:	August 9, 2000

III. SITE INFORMATION

- A. Incident Category
- CERCLA-Emergency Response
- B. Site Description

1. Site Location

The University Psychiatric Center (UPC) Mercury Spill site is located at 28800 Ryan Road, Suite 300, Warren, Macomb County, Michigan. The actual spill location was in a conference room on the third floor of a three story office building (the Hutzler Professional Center). Other medical offices occupy the building, and the University Center for Women's Medicine shares the third floor with the University Psychiatric Center. The UPC site is surrounded on all sides by commercial property, with the Hutzler Health Center connected to the building. Wayne State University's (WSU) Department of Psychology runs the clinic and several other research offices in the building. WSU is the leaseholder of the building.

2. Description of Threat

An adolescent patient had broken a manometer containing elemental mercury around 1830 hours on August 2, 2000, in a group conference room at the UPC. Clinic staff immediately evacuated and secured the conference room. However, the building superintendent attempted to clean up the mercury spill the next morning. During these clean-up operations, the mercury was transferred to a second room and subsequently spilled there. In addition, a vacuum cleaner was used in the conference room as part of the clean-up activities.

IV. RESPONSE INFORMATION

A. Current Situation:

WSU's Office of Environmental Health and Safety responded to the spill at the UPC. WSU contracted Marine Pollution Control (MPC) to perform decontamination activities, and provided technical assistance and oversight to MPC. All mercury contaminated material has been bagged and placed in a secured room until WSU finalizes disposal arrangements. Operations at the clinic resumed on August 10, 2000, after air sampling results verified that the mercury vapor levels in the clinic were within the acceptable range of 1-3 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$), as advised by the Michigan Department of Community Health (MDCH) in conjunction with the Agency for Toxic Substances and Disease Registry (ATSDR).

B. Actions Taken:

On Thursday, August 3, 2000, at approximately 1345 hours, U.S. EPA and START mobilized to the UPC Mercury Spill site. U.S. EPA met with UPC's General Site Administrator, UPC's Safety Officer, Warren Fire Department's Deputy Fire Marshal, and the building superintendent to gain information regarding the spill. The UPC representatives stated that the spill occurred on the evening of August 2 and that the clinic staff secured the room. Sometime on August 3, 2000, the building superintendent took steps to clean up the spill. The superintendent did not see any signs of elemental mercury on the floor and thought that all of it was contained in the manometer's cuff. He transferred the mercury into a plastic bag and placed it in a red bio-hazard sharps container. He swept the carpet with a vacuum cleaner, and resealed the door until further information was obtained regarding additional actions. The sharps container was placed in a limited access bio-hazard room in the adjoining Hutzler Health Center. After the Warren Fire Department and Michigan Department of Community Health were notified, assistance from the U.S. EPA was

requested. The U.S. EPA advised UPC to bag and isolate the vacuum cleaner that was used in the conference room. The building's superintendent stated that the vacuum cleaner had not been used again after he swept the floor of the conference room. In addition, the superintendent informed the group that each suite in the building had a separate ventilation system.

At approximately 1435 hours, WSU and MPC arrived at the site. At approximately 1525 hours, U.S. EPA, START, and WSU investigated the conference room and the bio-hazard room. There were visible beads of mercury on the broken manometer in the conference room, and on the floor and on top of the sharps container in the bio-hazard room. Two Jerome mercury vapor analyzers (MVAs) were used to screen the rooms for mercury vapor and the results were 0 to 3 $\mu\text{g}/\text{m}^3$ in the breathing zone and along the floor, and as high as 30 $\mu\text{g}/\text{m}^3$ near the visible beads of mercury in both rooms. The vacuum was screened and a reading as high as 291 $\mu\text{g}/\text{m}^3$ was obtained. U.S. EPA recommended that the vacuum be properly disposed of with the mercury debris, and WSU and the building superintendent agreed with the recommendation.

At approximately 1615 hours, MPC vacuumed the carpet in the initial spill room with a mercury vacuum cleaner and bagged the broken manometer. At approximately 1745 hours, MPC bagged all mercury-contaminated material in the bio-hazard room and vacuumed the floor of the bio-hazard room. MPC sprayed a mercury cleaning solution, HgX, on the floor of the bio-hazard room and allowed it to dry overnight. All mercury-contaminated material was placed in a secure room until proper disposal arrangements could be finalized. UPC's General Site Administrator decided to suspend operations at the clinic until clearance air samples were collected, and analytical results were received.

On Friday, August 4, 2000, MPC removed a 3-by 10-foot section of carpet from inside the initial spill room and mopped the HgX solution from the floor of the bio-hazard room. WSU collected air samples from in the conference room, an adjoining hallway, and the waiting room of the UPC. Additional samples were collected from the adjacent clinic on the third floor, an outdoor area, and the bio-hazard room. Air samples were collected utilizing SKC charcoal tubes and pumps, and were delivered to AAC Trinity for analysis.

A second round of air sampling was conducted on Monday, August 7, 2000. Analytical results from the first round of sampling did not meet the detection limit requirements for the clean-up levels established by MDCH and ATSDR. Samples were collected again from the same locations.

Analytical results received on Wednesday, August 9, 2000, indicated that the mercury vapor levels in all the rooms met the clean-up criteria established by the MDCH and ATSDR. WSU notified all involved agencies of the results, and the UPC resumed operations at the clinic Thursday, August 10, 2000.

C. Next Steps

WSU will arrange for proper disposal of all mercury-contaminated material and will notify all agencies of ultimate disposal, as appropriate.

D. Key Issues

None.

V. **COST INFORMATION**

Estimated site costs as of August 10, 2000:

START	\$ 1,000.00
U.S. EPA	\$ 1,000.00





20

30

10

0

mmHg



8000

